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09/499,999	02/08/2000	Huan-Yu Su	01CON314P	1996

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EXAMINER

ARMSTRONG, ANGELA A

ART UNIT PAPER NUMBER

2654

DATE MAILED: 11/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/499,999

Applicant(s)

SU, HUAN-YU

Examiner

Angela A. Armstrong

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,10-27 and 42-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,10-27 and 42-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 15 August 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Prior to the mailing of the Office Action mailed July 17, 2002, applicant has submitted a supplemental preliminary amendment to amend claims 4, 5, 9, 10, and 11-15 without adding new matter. Applicant has also made corrections to the specification and drawings without adding new matter. In response to the Office Action mailed July 17, 2002, applicant has submitted an amendment to add new claims 46-49 and response which includes the previously submitted preliminary amendment and which addresses the rejection of claims 1-7, 9-27 and 42-45.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6, 9-16, 18-27 and 42-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart et al (US Patent No. 5,761,634) in view of Otani (US Patent No. 6,400,693).
3. Stewart discloses a method and apparatus for making rate selections for speech encoders.
4. Regarding claims 1, 9, and 16 at col. 3, lines 14-15, Stewart discloses a rate controller, which determines and provides selected rates to the encoders, which reads on "a speech data rate determiner." Stewart further discloses at Figure 1, element 105 a plurality of speech data encoders. At col. 3, lines 66-67, Stewart also teaches that the encoding system allows for

Art Unit: 2654

encoding of speech, video or data. Stewart does not specifically disclose that the encoding scheme of a first encoder differs from an encoding scheme of a second encoder. However, implementation of a variety of encoding schemes was well known in the art.

In a similar field of endeavor, Otani discloses a communications apparatus for multimedia information which implements a plurality of encoding schemes to implement the encoding of a variety of data, such as audio and video data for use in a television telephone apparatus or video-conferencing (col. 1, lines 9-12 and col. 8, lines 14-24). Otani discloses application of encoding schemes of 64kbps PCM, 64kbps, 56kbps, or 48kbps SB-ADPCM, 32 kbps ADPCM, and LD-CELP.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the encoding system of Stewart to implement multiple encoding schemes as taught by Otani, for implementation in a television-telephone environment.

Regarding claims 3 and 18, Stewart and Otani discloses everything as claimed in claim 1. Additionally, at col. 4, lines 29-55, Stewart discloses the encoders divide received segments into frames and declares each frame as either $1/8$, $1/4$, $1/2$, or a full rate frame and encodes the frames accordingly, which reads on "wherein said data signal includes a first frame and a second frame, and wherein said first frame is encoded using said first encoders and said second frame is encoded using said second encoders."

Regarding claim 4, Stewart and Otani discloses everything as claimed in claim 1. Additionally, at col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can implement a variety of encoding schemes including adaptive differential pulse code modulation

Art Unit: 2654

(ADPCM), which reads on “said plurality of speech data signal encoders include G.727 ITU compliant speech encoders.”

Regarding claims 5 and 45, Stewart and Otani discloses everything as claimed in claims 1 and 16. Additionally, at col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can implement a variety of encoding schemes including code excited linear prediction (CELP), which reads on “speech data signal encoders include G.729 ITU compliant speech encoders and G.723.1 ITU compliant speech encoders.”

Regarding claim 6, Stewart and Otani discloses everything as claimed in claim 1. At col. 4, lines 29-55, Stewart discloses the encoders divide received segments into frames and declares each frame as either $1/8$, $1/4$, $1/2$, or a full rate frame and encodes the frames accordingly, which reads on “said system is a variable bit-rate speech encoding system and each of said speech data signal encoders operates at a different fixed bit-rate.”

Regarding claim 42, Stewart and Otani discloses everything as claimed in claim 1. At col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can implement a variety of encoding schemes including code excited linear prediction (CELP) and adaptive differential pulse code modulation (ADPCM), which reads on “encoding scheme based on G.729 and G.721.”

Regarding claim 19, Stewart and Otani discloses everything as claimed in claim 16. Additionally, at col. 4, lines 34-37 Stewart discloses the system divides the signal stream into 20ms frames consisting of 160 samples of the source speech waveform, which reads on “data signal is a single frame of an active speech signal.”

Art Unit: 2654

Regarding claim 20, Stewart and Otani discloses everything as claimed in claim 16. Additionally, at col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can implement a variety of encoding schemes including code excited linear prediction (CELP), which reads on "speech data signal encoders include G.729 ITU compliant speech encoders."

Regarding claim 21, Stewart and Otani discloses everything as claimed in claim 16. At col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can implement a variety of encoding schemes including code excited linear prediction (CELP) and adaptive differential pulse code modulation (ADPCM), which reads on "encoding scheme based on G.729 and G.726."

Regarding claim 10, at col. 3, lines 14-15, Stewart and Otani discloses a rate controller, which determines and provides selected rates to the encoders, which reads on "a speech data rate determiner." Stewart further discloses at Figure 1, element 105 a plurality of speech data encoders. Stewart discloses a controlling DSP for passing rate selections to encoders at Figure 6, element 603, which reads on "a network controller capable of selecting at least two of said plurality of speech encoders, including said first encoder and said second encoder." At col. 3, lines 66-67, Stewart also teaches that the encoding system allows for encoding of speech, video or data. Stewart does not specifically disclose that the encoding scheme of a first encoder differs from an encoding scheme of a second encoder. However, implementation of a variety of encoding schemes was well known in the art.

In a similar field of endeavor, Otani discloses a communications apparatus for multimedia information which implements a plurality of encoding schemes to implement the encoding of a variety of data, such as audio and video data for use in a television telephone apparatus or video-

Art Unit: 2654

conferencing (col. 1, lines 9-12 and col. 8, lines 14-24). Otani discloses application of encoding schemes of 64kbps PCM, 64kbps, 56kbps, or 48kbps SB-ADPCM, 32 kbps ADPCM, and LD-CELP.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the encoding system of Stewart to implement multiple encoding schemes as taught by Otani, for implementation in a television-telephone environment.

Regarding claim 11, Stewart and Otani discloses everything as claimed in claim 10. Additionally, at col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can implement a variety of encoding schemes including code excited linear prediction (CELP), which reads on "speech data signal encoders include G.729 ITU compliant speech encoders."

Regarding claim 12, Stewart and Otani discloses everything as claimed in claim 10. Additionally, at col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can implement a variety of encoding schemes including code excited linear prediction (CELP), which reads on "speech data signal encoders include G.729 ITU compliant speech encoders and G.723.1 ITU compliant speech encoders."

Regarding claims 13-14, Stewart and Otani discloses everything as claimed in claim 10. Stewart discloses a controlling DSP for passing rate selections to encoders at Figure 6, element 603, which reads on "network controller is capable of selecting two or more speech data signal encoder groups."

Regarding claim 15, Stewart and Otani discloses everything as claimed in claim 13. At col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can implement a variety of encoding schemes including code excited linear prediction (CELP) and adaptive differential

Art Unit: 2654

pulse code modulation (ADPCM), which reads on “encoding scheme based on G.729 and G.721.”

Regarding claims 43-44, Stewart and Otani disclose everything as claimed in claim 10. Additionally, at col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can implement a variety of encoding schemes including code excited linear prediction (CELP), which reads on “speech data signal encoders include G.729 ITU compliant speech encoders and G.723.1 ITU compliant speech encoders.”

Regarding claim 22, at col. 3, lines 14-15, Stewart discloses a controlling DSP for passing rate selections to encoders at Figure 6, element 603, which reads on “choosing according to a predetermined factor, one group from a plurality of groups of speech encoders.” Stewart discloses a rate controller, which determines and provides selected rates to the encoders, which reads on “determining a data rate on one of said speech signal frames.” Stewart further discloses at Figure 1, element 105 a plurality of speech data encoders. Additionally, at col. 4, lines 29-55, Stewart discloses the encoders divide received segments into frames and declares each frame as either $1/8$, $1/4$, $1/2$, or a full rate frame and encodes the frames accordingly, which reads on “selecting, according to said data rate, one of said plurality of speech encoders in said chosen group and encoding said one of speech signal frames using said selected speech encoder.” At col. 3, lines 66-67, Stewart also teaches that the encoding system allows for encoding of speech, video or data. Stewart does not specifically disclose that the encoding scheme of a first encoder differs from an encoding scheme of a second encoder. However, implementation of a variety of encoding schemes was well known in the art.

Art Unit: 2654

In a similar field of endeavor, Otani discloses a communications apparatus for multimedia information which implements a plurality of encoding schemes to implement the encoding of a variety of data, such as audio and video data for use in a television telephone apparatus or video-conferencing (col. 1, lines 9-12 and col. 8, lines 14-24). Otani discloses application of encoding schemes of 64kbps PCM, 64kbps, 56kbps, or 48kbps SB-ADPCM, 32 kbps ADPCM, and LD-CELP.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the encoding system of Stewart to implement multiple encoding schemes as taught by Otani, for implementation in a television-telephone environment.

Regarding claim 23, Stewart and Otani discloses everything as claimed in claim 22. Additionally, at col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can implement a variety of encoding schemes including code excited linear prediction (CELP), which reads on "speech data signal encoders include G.729 ITU compliant speech encoders."

Regarding claim 24, Stewart and Otani discloses everything as claimed in claim 22. Additionally, at col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can implement a variety of encoding schemes including code excited linear prediction (CELP), which reads on "speech data signal encoders include G.729 ITU compliant speech encoders and G.723.1 ITU compliant speech encoders."

Regarding claims 25-26, Stewart and Otani discloses everything as claimed in claim 22. Stewart discloses a controlling DSP for passing rate selections to encoders at Figure 6, element 603, which reads on "network controller is capable of selecting two or more speech data signal encoder groups."

Art Unit: 2654

Regarding claim 27, Stewart and Otani discloses everything as claimed in claim 25. At col. 4, line 64 continuing to col. 5, line 5, Stewart discloses the system can implement a variety of encoding schemes including code excited linear prediction (CELP) and adaptive differential pulse code modulation (ADPCM), which reads on “encoding scheme based on G.729 and G.721.”

Claims 2, 7, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart in view of Otani and further in view of Taumi et al (US Patent No. 6,006,178).

5. Regarding claims 2 and 17, Stewart and Otani teach everything as claimed in claims 1 and 16. However, neither Stewart nor Otani specifically teach that the frames are 10ms in length. However, implementation of speech signal processing with speech frames of 10ms in length was well known in the art.

In a similar field of endeavor, Taumi discloses a speech encoder for encoding a speech or voice signal with a high quality at a short frame period or length of 5ms to 10ms (col. 1, lines 8-12).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Stewart and Otani and implement short frame periods of 5ms to 10ms, as taught by Taumi, for the purpose of achieving high quality encoding as suggested by Taumi.

Regarding claim 7, Stewart and Otani teach everything as claimed in claim 1. However, neither Stewart nor Otani specifically teach that the frames are 5ms in length. However, implementation of speech signal processing with speech frames of 5ms in length was well known in the art.

Art Unit: 2654

In a similar field of endeavor, Taumi discloses a speech encoder for encoding a speech or voice signal with a high quality at a short frame period or length of 5ms to 10ms (col. 1, lines 8-12).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Stewart and Otani and implement short frame periods of 5ms to 10ms, as taught by Taumi, for the purpose of achieving high quality encoding as suggested by Taumi.

Claims 46-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart in view of Otani and further in view of DeJaco (US Patent No. 5,911,128).

6. Regarding claims 46-49, Stewart and Otani disclose everything as claimed in claims 1, 10, 16, and 22. Stewart and Otani do not specifically disclose that the speech data rate determinator determines the data rate based on a speech classification of a frame. However, selecting a data rate for speech encoding based on speech classification was well known in the art.

In a similar field of endeavor, DeJaco discloses a method and apparatus for performing speech frame encoding mode selection in a variable rate encoding system. Specifically, at col. 6, lines 50-63, DeJaco describes implementation of full, half or quarter rates based on voiced or unvoiced classification of the speech signal. DeJaco teaches that encoding mode selection is advantageous because it provides for more rate efficient coding (Abstract).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Stewart and Otani to implement encoding mode selection based on speech classification, as taught by DeJaco, for the purpose of providing rate efficient coding.

Response to Arguments

7. Applicant's arguments filed August 15, 2002, have been fully considered but they are not persuasive.

Applicant argues that independent claims 1, 10, 16, and 22 are patentably distinguishable over Stewart and Otani when viewed either solely or in combination. The Examiner disagrees and argues that the combination of Stewart and Otani would provide for a system for encoding audio, video or data which receives a speech signal, segments the signal into frames, and determines an encoding rate for each frame based on a predetermined criteria (as provided by Stewart), such that encoding of the frames is implemented via one of a plurality of supported encoding schemes (as provided by Otani).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Stewart teaches the system is applicable to speech, video or data (col. 3, lines 66-67). Stewart indicates that the system can implement a plurality of coding algorithms (col. 9, line 64 continuing to col. 10, line 5) and Otani teaches implementation encoding schemes for an apparatus that supports LD-CELP, PCM, A-law, etc (col. 12, lines 32-45) and suggest the system is advantageous in a multi-media or audio visual environment.

Art Unit: 2654

Applicant's arguments with respect to claims 46-49 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 703-308-6258. The examiner can normally be reached on Monday-Thursday 7:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600 Customer Service Office whose telephone number is 703-306-0377.

Angela A. Armstrong
Examiner
Art Unit 2654

AAA
November 1, 2002

Marsha D Banks-Harold
MARSHA D. BANKS-HAROLD
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